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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 851,566	05/08/2001	Charles A. Miller	P147-US	3229
27520	7590	05/21/2003		
FORMFACTOR, INC. LEGAL DEPARTMENT 2140 RESEARCH DRIVE LIVERMORE, CA 94550			EXAMINER LEE, BENNY T	
			ART UNIT 2817	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.



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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER NUMBER
6	

DATE MAILED:

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

 This application has been examined  Responsive to communication filed on 27 Apr 2002  This action is made final.A shortened statutory period for response to this action is set to expire Three (3) month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

## Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892.	2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.
3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449	4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152
5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474	6. <input type="checkbox"/> _____

## Part II SUMMARY OF ACTION

1.  Claims 2-42 are pending in the application.

Of the above, claims 26-35; 40-42 are withdrawn from consideration.

2.  Claims 1 have been cancelled.3.  Claims \_\_\_\_\_ are allowed.4.  Claims 2-25; 36, 39 are rejected.5.  Claims 37, 38 are objected to.6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.7.  This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.8.  Allowable subject matter having been indicated, formal drawings are required in response to this Office action.9.  The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are  acceptable;  
 not acceptable (see explanation).10.  The  proposed drawing correction and/or the  proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been  approved by the examiner.  disapproved by the examiner (see explanation).11.  The proposed drawing correction, filed \_\_\_\_\_, has been  approved.  disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.

Acknowledgment is made of the claim for priority under 35 U.S.C. § 119(e) to U.S. Provisional Application No. 60/\_\_\_\_\_, filed on \_\_\_\_\_.

12.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.14.  Other

## EXAMINER'S ACTION

SN 851566

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I.      Claims 2-25, 36-39, drawn to a coupling arrangement between a plurality of electronic components and a transmission line, classified in class 333, subclass 100.
- II.     Claims 26-35, 40-42, drawn to a coupling arrangement between a plurality of electronic components, classified in class 333, subclass 24R.

The inventions are distinct, each from the other because:

The inventions in Groups I and II are considered to be patentably distinct inventions under the common genus of electromagnetic coupling arrangements. Moreover, the coupling arrangements include mutually exclusive features rendering them patentably distinct. For example, the invention of Group I requires coupling to a transmission line whereas the invention of Group II requires no such transmission line. See MPEP 806.04(c).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

After consideration of the above, election is made without traverse to prosecute the invention of Group I, claims 2-25, 36-39. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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26-35, 40-42 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The disclosure is objected to because of the following informalities: Page 2, in the subheading, note that “Brief” should be deleted as being unnecessary. Page 4, paragraph 0007, note that “17a-17c” should be rewritten as --17a, 17b, 17c-- for consistency with the drawing figures. Page 6, paragraph 0012, 13th line, note that --as shown in Fig. 4-- should follow “scheme” for clarity. Page 7, paragraph 0016, line 8, note that --(see Figs. 1, 4)-- should follow “29” for consistency with the drawing figures. Page 8, paragraph 0018, first line, “Modulated” should be rewritten as --As shown in Fig. 1, modulated-- and in the second line, “one” should be rewritten as --electromagnetic coupler 18(1) of -- for clarity. Page 10, paragraph 0026, 5th line, note that “Data” should be rewritten as --In Fig. 6a, data-- for consistency with the drawing figure. Page 12, paragraph 0030, second and 8th lines, note that “through” should be rewritten as --14(2), 14(3), 14(4), 14(5), 14(6), 14(7)-- and --18(2), 18(3), 18(4), 18(5), 18(6), 18(7)--, respectively. Page 15, paragraph 0039, 8th and 9th lines, note that a --,-- after “protocols” and --,-- should follow “limitation”. Page 17, in the formula, note that the parameters in the formula need to be strictly defined. Page 18, note that the remainder of paragraph 0044, the entirety of paragraph 0045 and the start of paragraph 0046 appear to be missing from the specification. Page 20, line 1, note that “logic circuit 92” should correctly be --logic circuit 93--. Page 24, paragraph 0064, 5th line, note that “logic circuit 92” should correctly be --logic circuit 93--. Pages 24-25, 26, paragraphs 0064, 0066, 0068, note that “integrated circuit 90”

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appears to be inconsistent with the earlier use as "transmission line 90". Page 26, paragraph 0068, 5th line and 16th, 17th lines, note that "112(1)-112(3)" and "118(1)-118(3)" should be rewritten as --112(1), 112(2), 112(3)-- and --118(1), 118(2), 118(3)--, respectively. Page 26, paragraph 0069, 5th and 9th lines, note that "resonate" should correctly read as --of integrated circuits 112(1) - 112(3)--, respectively. Page 27, paragraph 0070, first and third lines note that "112" and "118" should be rewritten as --112(1) - 112(3)-- and --118(1) - 118(3)--, respectively. Page 28, paragraph 0072, note that "circuits 118(1) - 118(3)" should correctly read as --112(1) - 112(3)--. Page 29, paragraph 0076, 7th line, note that "later" should correctly be --latter--. Page 30, paragraph 0079, first, 11th and 15th, 16th lines, note that "17a to 17c" should properly be --17a, 17b, 17c--, "418" should correctly be --618-- and "634-646" should correctly be --634, 638, 642, 646--, respectively for proper characterizations. Page 31, paragraph 0080, 7th and 8th lines, note that in the sequence of reference numbers, appropriate reference numbers should correspond to the drawing in which they appear (e.g. "601, 602" appears in --Fig. 17a--, etc). Page 31, paragraph 0081, note that "Figures 1-17c" should be rewritten such as to be inclusive of each drawing figure. Page 32, paragraph 0082, 11th line, note that --depicted in fig. 18-- should follow "406" for clarity. Appropriate correction is required.

This Office Action is addressed by because of the following informalities. Note that use of specific reference numbers as --(1)...(x)-- is not allowed in accordance with the applicable drawing figures which use the --(1)...(x)-- designations. Moreover, applicant should review the

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description of each drawing figure to ensure that all labeled elements/features are commensurately described for each drawing figure. Appropriate correction is required.

The drawings are objected to because of the following: In fig. 3, reference label "40" appears to have been improperly used to depict different elements/features; In fig. 5, reference labels-- (14(x), 18)-- need to be provided as per the specification description of Fig. 5; In fig. 9, reference labels --(62(1) - 62(x), 68)-- need to be provided as per the specification description of Fig. 9, 10; In fig. 13, note that the individual blocks should be labeled accordingly to identify the function of each block; In fig. 15, reference labels --(112, 118)-- need to be provided as per the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The amendment filed 27 December 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In fig. 7, the change in the frequency parameter from "MHZ" to --GHz-- does not appear to be supported by the original disclosure.

A sufficient is required to cancel the new matter in the reply to this Office Action.

and/or claims - corrected under 35 U.S.C. 132, if applicable, including any claim failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claims 2, 3, 4, 6, 7, 8, 9, note that it is unclear which one of the plurality of electromagnetic couplers is intended by the recitation of "said electromagnetic coupler".

In claims 6, 7, 8, similarly it is unclear which one of the plurality of integrated circuits is intended by the recitation of "said integrated circuit".

In claim 18, note that it is unclear how "a plurality of transmission lines" relates to the single "transmission line" recited in claim 2.

The following claims have been found objectionable for reasons set forth below:

In claim 36, 4th and 5th lines, note that a --, -- should follow "coupling" (4th line, second occurrence) and "attenuation" (5th line) for clarity of description.

In claim 39, note that --respective-- should precede "integrated circuits" for a proper characterization.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(c) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371<sup>c</sup> of this title before the invention thereof by the applicant for patent

of 1999 (AIA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35

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U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIA (pre-AIA 35 U.S.C. 102(e)).

Claims 2-5, 10-15, 18-20, 23-25; 36 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Marketkar et al (of record).

Marketkar et al (fig. 11A) discloses an arrangement for electromagnetically coupling digital signals driven between transceivers (1120, 1122) on respective daughter cards to a transceiver (1110) on a motherboard via a bus or passive transmission line (1112) thereon. This electromagnetic coupling is effected by respective couplers (1140, 1141) electrically attached to transceivers (1120, 1122), respectively but is electromagnetically coupled (i.e. non-contacting) via coupling conductors (1114A, 1134A) to the transmission line bus (1112). As is evident from Fig. 11A, ends (1114B, 1134B) of the coupling conductors, (1114A, 1134A) are respectively coupled to ground (REF) via terminating resistors (1130, 1132). Moreover, note that the motherboard and the daughter cards are inherently constituted by printed circuit boards including respective substrates. Furthermore, such printed circuit boards would inherently include therewith integrated circuits such as the transceivers (1120, 1122). Note that of particular importance is that only a small amount of energy is transfer between the bus and the daughter cards (see page 3, paragraph

11 of the Disclosure Document filed by the assignee of the present application (1140, 1141). More specifically, the noise coupling is less than 10 dB (paragraph 11), which therein translating to attenuation greater than 10, 20 and 40 dB.

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With regard to claims 18-20, note that alternative embodiment fig. 11B discloses the bus being comprised of plural (i.e. two) transmission lines which loosely electromagnetically couple via corresponding plural coupling conductors in each coupler which is in turn coupled to a respective transceiver.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marketkar et al (of record) in view of Knight Jr et al (cited by applicant).

Marketkar et al, as described above, discloses the claimed invention except for the electromagnetic coupler being integrated with an integrated circuit package (cl. 7) and the electronic components being disposed on the substrate.

Knight Jr. et al (fig. 14A) discloses an electromagnetic coupling between an electronic component (1400') and a transmission line located on a motherboard where the electronic component is disposed on the motherboard. Moreover, as depicted in Fig. 15 an integrated circuit chip is electrically coupled to a magnetic core in a stacked, planar, side-by-side manner.

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Accordingly, it would have been obvious to have modified the electromagnetic coupler in Marketkar et al to have been a coupler conductor integrated with the integrated circuit transceiver therein in accordance with the teaching of Fig. 15 in Knight Jr et al. Such a modification would have been considered an obvious substitution of art recognized electromagnetic coupler arrangements which would not have affected the coupling function, thereby suggesting the obviousness of such a modification.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wong, Williamson on Burrage all pertain to non-contact coupling systems to a transmission line.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 308-4902.

BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817  
Lee/ek

04 25/03